Quentin Caudron, PhD

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Scientist, strategist, and community builder. I'm a driven leader with an interdisciplinary, technical background, combining academic curiosity with industry best practices. I greatly value mentoring and collaborative team-building, creative solutioning, transparency, and personal growth.

Professional Experience

Staff Data Scientist, Granular (Corteva Agriscience)   **July 2021 – present**

Large-scale spatial modeling. I developed and standardized workflows for developing large-scale predictive models ingesting satellite imagery across millions of acres and from terabytes of data, and concurrently trained models to predict planting and harvest dates, cover cropping, and tillage practices. I validated these models on external stakeholder data and productionalized their predictions to allow farmers to receive compensation from carbon markets for taking up greener practices and sequestering carbon in soil.

Data science lead, Carbon. As the lead data scientist for the Carbon Ecosystems Services portfolio, I answered questions that helped shape internal product strategy, around historical data inference, detection and spatial distribution of crop rotation practices, and estimating carbon credit payouts at the sub-county level.

Mentoring. As the most senior data scientist on the team, I gave scientific and tech talks, advocated for ongoing learning and growth, and drove a culture around engineering best practices, documentation, testing, and CI/CD.

Principal Data Scientist, CBRE   **April 2019 – June 2021**
Senior Data Scientist   **April 2018 – April 2019**
Data Scientist   **March 2016 – April 2018**

Head of team. I led CBRE Build's Data Science team and defined its strategy. I managed a team of five mid- and senior-level scientists, having secured funding for team growth and led the hiring process. The team worked actively across multiple products, offices, and departments, and was widely regarded as an authority in data science.

COVID impact lead. I was the lead scientist on a project combining epidemiological, economic, and financial modeling. My team was selected by C-suite to model the effects of the COVID pandemic on revenue. We delivered projections that reduced initial company-wide downsizing and furlough estimates, saving thousands of jobs.

Natural language processing. I led a team in developing methods to extract over one hundred attributes from unstructured legal documents. We contributed to multistage pipelines for detecting sections and tables from scanned lease documents, tokenizing, cross-classifying information, and deduplicating results.

User behavioral analytics. I developed unsupervised learning methods to detect common behavioral patterns. I built an automated system for classifying sales leads from user plaintext, and developed pawprint, a library for flexible user tracking and analytics. My team developed custom KPIs to guide product roadmaps.

Data in context. To aid in combining data from hundreds of sources across the company towards a clear ground truth, I implemented algorithms for community detection and deduplication. I was a core consultant with the Enterprise Data Platform, a company-wide initiative for unifying and serving data.

Community. I founded the Data Science Round Table, a multinational community sharing information, peer review, and mentorship across the company. I also created the Machine Learning Journal Club, providing biweekly educational presentations and live demos in a semi-technical manner.

Postdoctoral Researcher, Princeton University   **March 2013 – March 2016**

Mathematical epidemiology. Developed statistical tools for the prediction of epidemic sizes in highly stochastic regimes; introduced new computational methodology for parameter inference for small population dynamics.

Image processing and remote sensing. Built novel algorithms for the rapid, automatic analysis of noisy biomedical images, and developed hardware and software for remote sensing of field mice in outdoor enclosures.

Community. Founded PrincetonPy, a Python community spanning six hundred people and twenty academic departments. Created and delivered courses in Scientific Computing that received the highest ratings amongst graduate students, postdocs, and faculty.

Education

PhD	Computer Science	**University of Warwick, 2013**
MSc	Complexity Science (*with Distinction*)	**University of Warwick, 2009**
BSc	Chemistry, minor in Management (*with Honours*)	**University of Warwick, 2008**

Skills

Data science, machine learning, applied statistics, computer vision, and algorithms. Applying the scientific method critically and with integrity. Best practices around DataOps and MLOps, including reproducible exploratory data analytics, model development, and deployment. Python, numpy, pandas, scipy, scikit-learn, PyTorch, CatBoost.

Software engineering and infrastructure. Architecting of cloud-based solutions and pipelines for data collection and aggregation, and for model deployment. Unit tests, git, CI/CD, Docker, AWS, GCP, Terraform.

Leadership, mentorship, and team-building. The growth and professional development of my team are a core priority, and is a core team value. The space to learn new things, explore, and take contained risks is essential to the successful long-term operation of a data science team.

Technical communication to all audiences, with a strong focus on integrity and conveying context. Empathy for your audience and an understanding of their priorities allows more fluid communication, especially of concepts not familiar to non-technical stakeholders.

Community

Public speaker, scientific and data topics
I regularly deliver talks to numerous groups, including :

- a two-hour live-coded tutorial to four hundred people at PyData at Microsoft's Seattle campus in 2017

- talks on using genetic algorithms for antenna design and designing fractal antennas to various radio groups

- a day-long introduction to machine learning for the Puget Sound Programming Python group

- a talk to product managers on managing data science projects at ProductCamp Portland

- exploratory tours through aspects of bio-inspired computing and biomedical image processing at the local Scientific Computing Special Interest Group

- a whirlwind tour of machine learning at North Seattle College's Bachelor of Applied Science program, where I also served as a mock interviewer three years running.

Founder and organizer, Advanced Topics on Machine Learning   March 2017 − present
ATOM is an award-winning monthly meetup in Seattle attracting typical audiences of fifty data scientists of all levels. We cover theoretical or applied topics in modern machine learning, in depth, typically from papers in the recent literature. As a discussion group, ATOM events typically welcomed 50 people pre-COVID. ATOM is a Special Interest Group of the Puget Sound Programming Python community.

Board Member and Secretary, Puget Sound Repeater Group   January 2020 − present
The PSRG is a popular, local 501(c)3 amateur radio club. As Secretary, I manage official communications on behalf of the Board, record meetings, and aid in organizing events. As a Board Member, I represent the interests of all members in growing the club's activities and scope. I have implemented a Code of Conduct for events and social media, and organized three contests, one of which brought together over forty radio groups from across the region.

Instructor, Long Island CW Club   April 2021 − present
The LICW is a rapidly-growing online-focused amateur radio group that teaches Morse code (CW) over Zoom. I currently teach four times each week at the Intermediate and Advanced levels, mentoring students in head-copy, protocol, and improved sending. I was also a founding member of the weekly Antenna Forum.